



AIR-COOLED CHILLERS



APPLIED SYSTEMS

R-134a



www.daikin.eu

EWAD-AJYNN(A-Q-H) COOLING ONLY

A



ABOUT DAIKIN

Daikin has a worldwide reputation based on over 80 years' experience in the successful manufacture of high quality air conditioning equipment for industrial, commercial and residential use.

Daikin Europe N.V.

LARGER OPERATION RANGE

LARGER OPERATION RANGE

The EWAD-AJYNN is available in 4 different versions with cooling capacities ranging from 184 to 627kW. The units are ideal for use in severe weather conditions and over a wide operation range. This major benefit results from the incorporation of an auto adaptive control system with the following functionality:

- › Head pressure setback for high ambient operation: on hot days, when cooling is most needed, Daikin chillers will stay on line by modulating the capacity control in function of the high pressure.
- › Optional: Head pressure control (OPFS and OPLA): fan control for low ambient down to -18°C

	Application	Sizes	Capacity range	EERavg	Noise level
Std	Standard efficiency	15	184-588kW	2.56	93-98.7dBA
/A	High efficiency	11	247-627kW	3.14	96-99.2dBA
/Q	Extra low noise	11	203-500kW	2.53	84-86.2dBA
/H	High ambient	15	195-600kW	2.74	98-99.7dBA

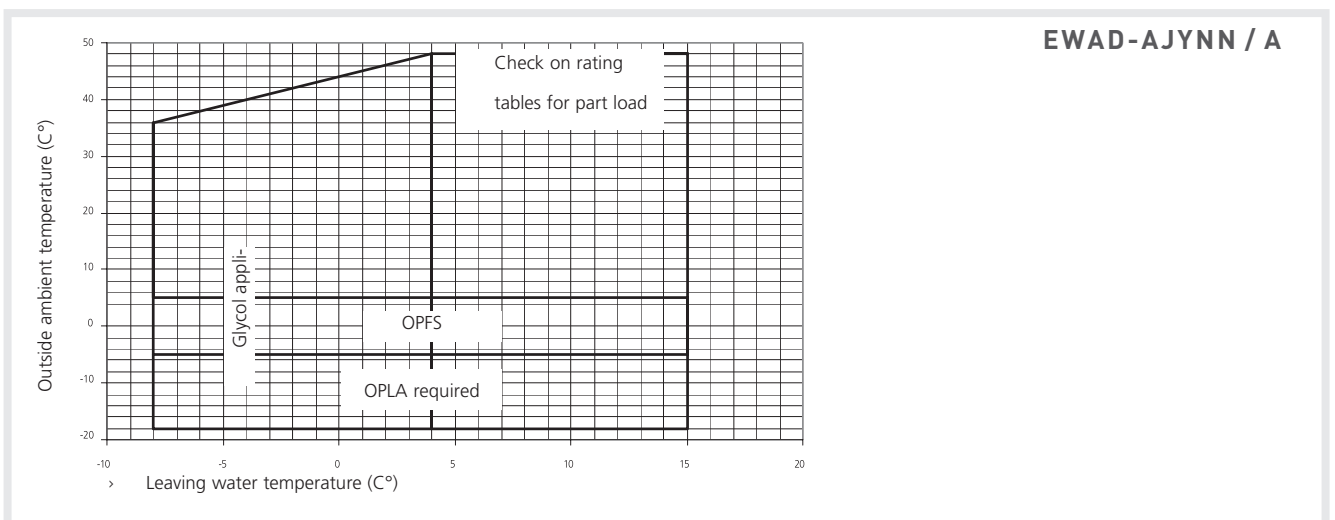
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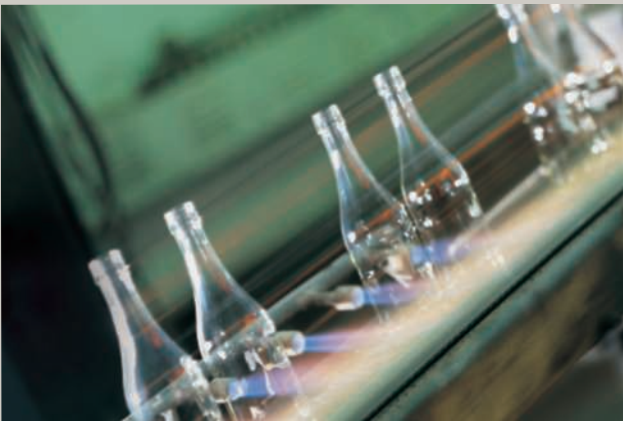
EWAD-AJYNN(A-Q-H)

Following integrated options are available on request:

- Hydronic:
- › OPSP – Single water circulation pump
 - › OPTP – Twin water circulation pump
 - › OPHP – High single pump
 - › OPHT – High twin pump

- Heat Recovery:
- › OPPR – Partial recovery
 - › OPTR – Total recovery



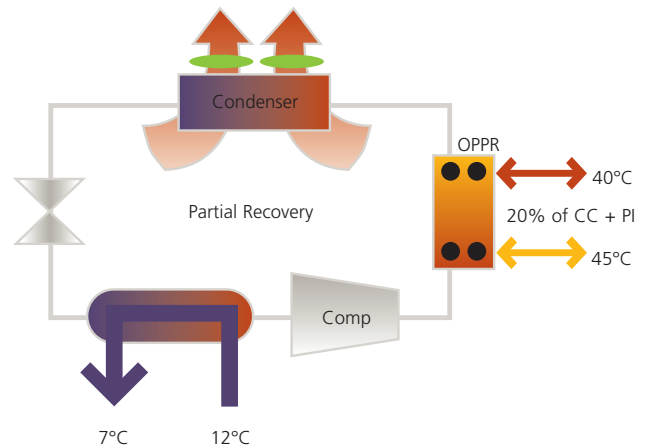


Heat recovery

Depending on the heating requirement either partial heat recovery (OPPR) or as a condenser full heat recovery (OPTR) may be selected.

OPPR – Partial recovery

A stainless steel brazed plate heat exchanger is mounted in series between the compressor and air-cooled condenser as a desuperheater. The sensible heat from the hot discharge gas will be recovered, while the latent heat exchange will occur in the air-cooled condenser. The unit's efficiency is maintained, as condensing pressure can be reduced due to air-cooled condenser becoming oversized.

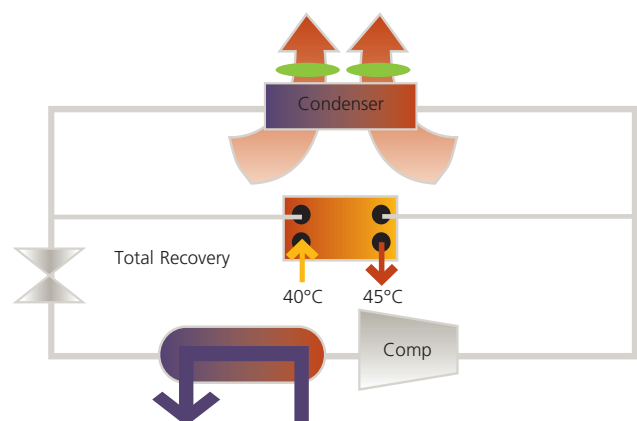


LARGE FLEXIBILITY

In many applications there often exists a simultaneous cooling and heating demand requirement alongside one another. To benefit from this, Daikin offers the full range of R-134a EWAD190-650AJYN chillers with the option of heat recovery. This option further increases the application flexibility and extends possibilities in the hotel and leisure industry as well as the industrial and process sectors. By energetically recovering useful heat from the cooling-cycle that would otherwise be rejected to the outside, extremely high COPs can be realised in heat recovery mode. The heat recovery unit aims to achieve an optimum balance between cooling and heat recovery to maximize the unit efficiency and offer savings in hot water production.

OPTR – Total recovery

A shell & tube heat exchanger is mounted in parallel with the air-cooled condenser for full heat recovery of both sensible and latent heat. Hot water temperatures up to 55°C can be achieved.



Noise

Standard units can be fitted with Option Reduced Noise (OPRN). OPRN includes lower speed condenser fans and flexible discharge pipes to reduce vibration and further minimise structural noise.

Both standard units and high efficiency units can be fitted with Option Low Noise (OPLN). OPLN includes lower speed condenser fans, suction and discharge muffler and highly absorbent sound proof cabinets around the compressors. Sound reduction towards standard noise units is ± 5 dBA.

For those particularly sound sensitive applications where Option Reduced Noise and Option Low Noise do not offer the desired noise level an Extra Low Noise standard efficiency version (/Q) is available. In addition to the features of OPLN the fan speed is further reduced to 500rpm and fitted with modulating fan speed control for a better "colour of sound" at lower ambient operation. The condenser section is enhanced or oversized. Sound reduction towards standard noise units is ± 13 dBA.

Efficiency

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The High efficiency units achieve an $EER_{avg} > 3$ compared to an EER_{avg} of 2.56 for the standard units. This implies that all high efficiency models are Eurovent "Class A".

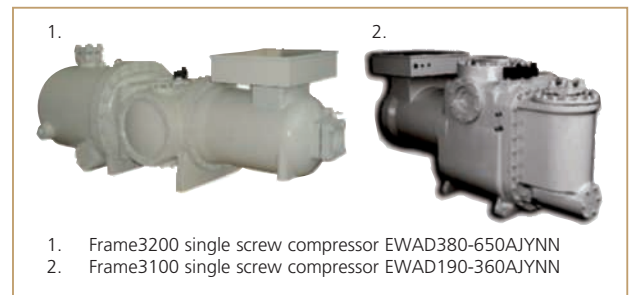
For higher ambient climates a High ambient version (/H) equipped with bigger diameter fans and stronger fan motors is available. The airflow over the condenser coils is increased by 50% compared to standard models, which has a positive effect on the EER and enables the unit to run under higher ambient temperatures (up to 48°C).

SINGLE SCREW COMPRESSOR

The new large Daikin chillers are fitted with a single screw compressor with stepless capacity control. The stepless capacity control enables the requirements to be closely matched by modulating the sliding valve position according to the chilled water control condition. Capacity control is infinitely variable between 12.5 and 100% on dual circuit units.

Main advantages:

- > Better part load efficiency (ESEER)
- > More stable chilled water temperatures
- > Closer control tolerance



HEAT EXCHANGER

Condenser

- > Constructed from specially designed header distribution pipes, combined with internally grooved Hi-X tubing and Epoxy coated fins
- > Standard anti-corrosion treated to better withstand the effects of the external environment
- > Optional: Condenser protection grilles (OPCG) are available throughout the whole range

Shell & tube evaporator

- > Special high efficiency tubes with grooves on the inside
- > Special header distribution system and design of water system results in high efficiency and reduced heat transfer surface
- > Compact dimensions and lower weight result in a smaller refrigerant volume
- > Fitted standard with evaporator heater tape



ELECTRONIC CONTROL

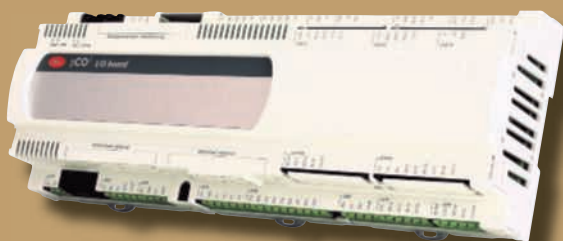
- › Advanced pCO² control
- › Detailed information on and accurate control of all functional parameters by easy menu scrolling
- › Chilled water and brine temperatures down to -8°C on standard unit (to be set up by a certified engineer)
- › Changeable digital input/output such as remote on/off, dual setpoint and capacity limit
- › Lead lag function is standard
- › Standard equipped with night setback and peak load limitation
- › Remote DDC (EKRUPCJ) can be installed up to 1,000m from the unit

Open Network Integration

Daikin has released a gateway for connection to BACnet, LonWorks and Modbus networks equipment and building control systems. BACnet, LonWorks and Modbus networks are recognised worldwide as the de facto standard within the building controls industry. BACnet, LonWorks and Modbus data communication protocols make it possible to control access, energy management, fire /life/safety, HVAC and lighting etc.

Simultaneous operation of up to 5 chillers is optional through EKCSII sequencing panel. This function enables a Daikin 3MW chiller plant to be operated via a single controller.

Electronic control:



SPECIFICATIONS

STANDARD UNIT			EWAD190AJYNN	EWAD200AJYNN	EWAD230AJYNN	EWAD260AJYNN	EWAD280AJYNN
Nominal capacity *	cooling	kW	184.00	197.80	225.00	245.00	261.00
Capacity steps *		%	12.5 - 100				
Nominal input	cooling	kW	81.30	79.60	84.60	93.50	101.30
EER			2.26	2.48	2.66	2.62	2.58
ESEER			3.17	3.46	3.59	2.52	3.58
Casing	colour		RAL7032				
Dimensions (HxWxD)		mm	2,340X2,235x2,240		2,340X2,235x3,140		
Machine weight	unit	kg	2,380	2,466	2,766	2,766	2,806
Air heat exchanger	type		Lanced fins – internally spiral wound tubes				
Water heat exchanger	type		Plate to plate heat exchanger		Shell and tube		
	minimum water volume in the system	l	25	31	93	93	90
Nominal water pressure drop	heat exchanger cooling	kPa	28.7	23	39	44.5	43
	type		Helical				
Fan	nominal air flow	m ³ /min	918	894	1374	1374	1356
	quantity		4	4	6	6	6
	speed	rpm	900	900	900	900	900
	motor output	W	1,160	1,160	1,160	1,160	1,160
Compressor	type		Semi-hermetic single screw compressor				
Sound power	cooling	dB(A)	93.7	93.7	94.3	94.3	94.3
Refrigerant circuit	refrigerant type		R-134a				
	refrigerant charge	kg	38	40	50	50	53
	no of circuits		2	2	2	2	2
Power supply			400V/50hz/3~				

STANDARD EFFICIENCY UNIT, EXTRA LOW NOISE (I/Q)			EWAD210AJYNN/Q	EWAD240AJYNN/Q	EWAD260AJYNN/Q	EWAD280AJYNN/Q	EWAD300AJYNN/Q
Nominal capacity *	cooling	kW	203	231.1	252.7	270.8	286.1
Capacity steps *		%	12.5 - 100				
Nominal input	cooling	kW	79.8	85.2	93.7	104.5	114.5
EER			2.54	2.71	2.7	2.59	2.5
ESEER			3.86	4.05	4.02	3.96	3.83
Casing	colour		RAL7032				
Dimensions (HxWxD)		mm	2,340X2,235x3,140	2,340X2,235x4,040			
Machine weight	unit	kg	3,046	3,366	3,466	3,546	3,556
Air heat exchanger	type		Lanced fins – internally spiral wound tubes				
Water heat exchanger	type		Shell and tube				
	minimum water volume in the system	l	90	113	113	164	159
Nominal water pressure drop	heat exchanger cooling	kPa	25.5	19.5	22.5	22.5	21
	type		Helical				
Fan	nominal air flow	m ³ /min	774	1,074	1,032	1,032	1,032
	quantity		6	8	8	8	8
	speed	rpm	500	500	500	500	500
	motor output	W	450	450	450	450	450
Compressor	type		Semi-hermetic single screw compressor				
Sound power	cooling	dB(A)	84.3	84.7	84.7	84.7	84.5
Refrigerant circuit	refrigerant type		R-134a				
	refrigerant charge	kg	56	64	76	80	80
	no of circuits		2	2	2	2	2
Power supply			400V/50hz/3~				

* Nominal cooling capacity and power input are based on 12/7% entering/leaving water temperature and 35 C° ambient temperature. Power input is for the whole unit.

EWAD300AJYNN	EWAD320AJYNN	EWAD340AJYNN	EWAD360AJYNN	EWAD400AJYNN	EWAD440AJYNN	EWAD480AJYNN	EWAD500AJYNN	EWAD550AJYNN	EWAD600AJYNN
275.00	298.40	321.00	370.00	401.3	451.0	478.7	510.1	551.0	588.0
12.5 - 100									
108.30	119.40	123.40	133.40	155.7	167.0	177.6	186.9	195.6	202.9
2.54	2.50	2.60	2.77	2.58	2.70	2.69	2.73	2.82	2.90
3.58	3.66	3.53	3.80	2.58	3.24	3.23	3.09	3.17	3.23
RAL7032									
2,340x2,235x3,140				2,340x2,235x4,040					
2,846	2,846	3,166	3,186	3,552	3,932	3,997	4,052	4,092	4,122
Lanced fins – internally spiral wound tubes				Grooved tubes and ALU coated louvred fins					
Shell and tube									
90	90	113	113	128	170	164	164	160	160
46	54	33.5	43	49.7	59.1	52.2	57.4	54.1	60
Helical									
1,338	1,338	1,836	1,836	1,938	2,694	2,640	2,580	2,580	2,580
6	6	6	6	6	8	8	8	8	8
900	900	900	900	890	890	890	890	890	890
1,160	1,160	1,160	1,160	1,730	1,730	1,730	1,730	1,730	1,730
Semi-hermetic single screw compressor									
94.3	94.3	94.7	97.2	95.8	96.7	96.7	96.7	98.2	98.7
R-134a									
56	56	64	66	70	80	78	76	76	76
2	2	2	2	2	2	2	2	2	2

400V/50Hz/3~

EWAD320AJYNN/Q	EWAD340AJYNN/Q	EWAD400AJYNN/Q	EWAD440AJYNN/Q	EWAD460AJYNN/Q	EWAD500AJYNN/Q
299.4	308.8	400.5	428.5	458.4	500.8
12.5 - 100					
126.1	136.3	156.0	173.8	182.4	189.9
2.37	2.27	2.57	2.47	2.51	2.64
3.73	3.57	3.40	3.33	3.30	3.29
RAL7032					
2,340x2,235x4,040			2,340x2,235x4,940		
3,556	3,556	3,567	3,722	3,912	3,972
Lanced fins – internally spiral wound tubes			Grooved tubes and ALU coated louvred fins		
Shell and tube					
159	159	170	170	164	164
22.5	24	47.2	53.9	48.3	54.1
Helical					
1,032	1,032	1,704	1,644	1,926	2,208
8	8	8	8	9	8
500	500	500	500	500	500
450	450	770	770	770	770
Semi-hermetic single screw compressor					
84.7	84.7	84.7	84.7	85.7	86.2
R-134a					
80	110	72	80	83	86
2	2	2	2	2	2

400V/50Hz/3~

SPECIFICATIONS

HIGH EFFICIENCY UNIT (A)			EWAD260AJYNN/A	EWAD280AJYNN/A	EWAD320AJYNN/A	EWAD340AJYNN/A
Nominal capacity*	cooling	kW	247	275	301.5	327
Capacity steps		%	12.5 - 100			
Nominal input*	cooling	kW	79.2	87.3	94.2	103.8
EER			3.12	3.15	3.2	3.15
ESEER			3.99	3.89	4.01	4.04
Casing	colour		RAL7032			
Dimensions (HxWxD)		mm	2,340x2,235x3,140	2,340x2,235x4,040		
Machine weight		kg	2,866	3,186	3,286	3,366
Air heat exchanger	type		Lanced fins – internally spiral wound tubes			
Water heat exchanger	type		Shell and tube			
	minimum water volume in the system	l	93	113	113	164
Nominal water pressure drop	heat exchanger cooling	kPa	36	26	30.5	30.5
Fan	type		Helical			
	nominal air flow	m ³ /min	1,338	1,836	1,782	1,782
	quantity		6	8	8	8
	speed	rpm	900	900	900	900
	motor output	W	1,160	1,160	1,160	1,160
Compressor	type		Semi-hermetic single screw compressor			
Sound power	cooling	dB(A)	96.8	97.2	97.2	97.2
Refrigerant circuit	refrigerant type		R-134a			
	refrigerant charge	kg	60	68	80	80
	no of circuits		2	2	2	2
Power supply			400V/50Hz/3~			

HIGH AMBIENT UNIT (H)			EWAD200AJYNN/H	EWAD210AJYNN/H	EWAD240AJYNN/H	EWAD260AJYNN/H	EWAD280AJYNN/H
Nominal capacity*	cooling	kW	194.6	208.3	233.5	256.1	273.7
Capacity steps		%	12.5 - 100				
Nominal input*	cooling	kW	77.2	75.6	83	91	97.8
EER			2.52	2.76	2.81	2.81	2.8
ESEER			3.23	3.49	3.4	3.44	3.49
Casing	colour		RAL7032				
Dimensions (HxWxD)		mm	2,340x2,235x2,240		2,340x2,235x3,140		
Machine weight		kg	2,380	2,466	2,766	2,766	2,806
Air heat exchanger	type		Lanced fins – internally spiral wound tubes				
Water heat exchanger	type		Plate to plate heat exchanger			Shell and tube	
	minimum water volume in the system	l	25	31	93	93	90
Nominal water pressure drop	heat exchanger cooling	kPa	31.5	25	41	47.5	46
Fan	type		Helical				
	nominal air flow	m ³ /min	1,434	1,368	2,154	2,154	2,100
	quantity		4	4	6	6	6
	speed	rpm	900	900	900	900	900
	motor output	W	1,800	1,800	1,800	1,800	1,800
Compressor	type		Semi-hermetic single screw compressor				
Sound power	cooling	dB(A)	98.2	98.2	98.8	98.8	98.8
Refrigerant circuit	refrigerant type		R-134a				R-134a
	refrigerant charge	kg	36	40	50	50	53
	no of circuits		2	2	2	2	2
Power supply			400V/50Hz/3~				

* Nominal cooling capacity and power input are based on 12/7% entering/leaving water temperature and 35 C° ambient temperature. Power input is for the whole unit.

EWAD360AJYNN/A	EWAD380AJYNN/A	EWAD420AJYNN/A	EWAD500AJYNN/A	EWAD550AJYNN/A	EWAD600AJYNN/A	EWAD650AJYNN/A
351	376	401	501.4	531.5	582.2	626.6
12.5 - 100						
112.8	120.2	127.5	160.6	170.9	183.5	195.4
3.11	3.13	3.15	3.12	3.11	3.17	3.21
4.04	3.91	3.63	3.60	3.61	3.56	3.37
RAL7032						
2340x2235x4040				2340x2235x4940		
3376	3321	3386	4252	4642	4652	4652
Lanced fins – internally spiral wound tubes			Grooved tubes and ALU coated louvred fins			
Shell and tube						
159	159	159	263	263	256	256
29.5	33	37	56.6	66.2	55.9	62.7
Helical						
1,782	2,640	2,580	2,580	3,228	3,228	3,228
8	8	8	8	10	10	10
900	900	900	890	890	890	890
1,160	1,160	1,160	1,730	1,730	1,730	1,730
Semi-hermetic single screw compressor						
97.2	99.7	99.7	98.7	99.2	99.2	99.2
R-134a						
80	80	80	80	104	104	104
2	2	2	2	2	2	2
400V/50Hz/3~						

EWAD300AJYNN/H	EWAD320AJYNN/H	EWAD340AJYNN/H	EWAD400AJYNN/H	EWAD420AJYNN/H	EWAD460AJYNN/H	EWAD480AJYNN/H	EWAD500AJYNN/H	EWAD550AJYNN/H	EWAD600AJYNN/H
289.3	306.4	335.6	381.2	426.0	468.1	502.1	529.5	561.0	600.4
12.5 - 100									
103.9	112.1	120.3	127.4	146.5	160.3	170.8	180.1	192.2	198.4
2.78	2.73	2.79	2.99	2.91	2.92	2.94	2.94	2.92	3.03
3.49	3.52	3.41	3.67	3.39	3.30	3.29	3.15	3.17	3.23
RAL7032									
2,340x2,235x3,140		2,340x2,235x4,040			2,340x2,235x4,940				
2,846	2,846	3,166	3,186	3,942	4,202	4,277	4,332	4,392	4,402
Lanced fins – internally spiral wound tubes		Grooved tubes and ALU coated louvred fins							
Shell and tube									
90	90	113	113	170	170	164	164	160	160
50.5	55.5	36	44.5	53.1	63.1	55.9	61.4	55.9	61.6
Helical									
2,046	2,046	2,874	2,874	2,580	3,372	3,300	3,228	3,228	3,228
6	6	8	8	8	10	10	10	10	10
900	900	900	900	890	890	890	890	890	890
1,800	1,800	1,800	1,800	1,730	1,730	1,730	1,730	1,730	1,730
Semi-hermetic single screw compressor									
98.8	98.8	99.2	101	96.7	97.7	97.7	97.7	99.2	99.7
R-134a									
56	56	64	66	76	86	95	104	104	104
2	2	2	2	2	2	2	2	2	2
400V/50Hz/3~									

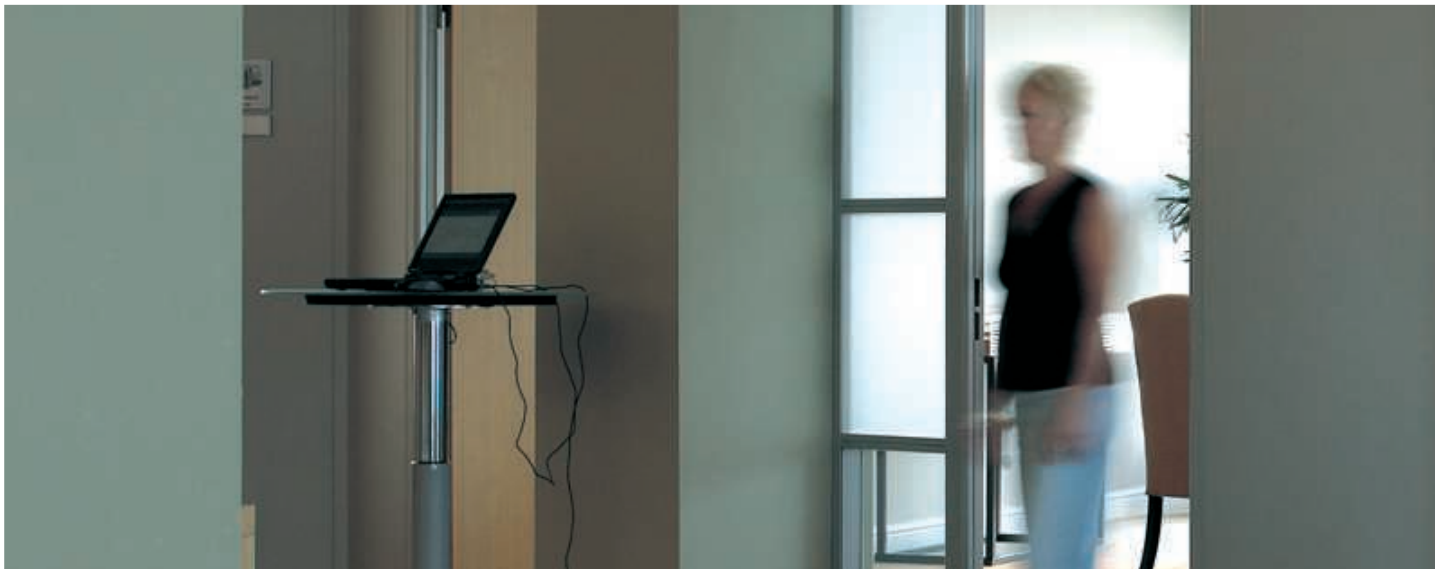
OPTIONS & ACCESSORIES

OPTIONS										
Reference	Products	Integrated Hydraulics				Noise & HP Control			Heat Recovery	
		Single pump	Twin pump	High ESP pump	High ESP twin pump	Low noise	Fan Silent	Low Ambient	Total Heat Recovery	Partial Heat Recovery
		OPSP	OPTP	OPHP	OPHT	OPLN	OPFS	OPLA	OPTR	OPPR
EWAD-AJYNN	190-200	•(1)	•(2)(3)	•(1)	•(2)(3)	•	•	•	•	•
	230-260-280-300-320-340-360	•	•	•	•	•	•	•	•	•
	400	•	•	•	•	•	•	•	•	•
	440-480-500-550-600	•	•	•	•	•	•	•	•	•
EWAD-AJYNN/A	260-280-320-340-360-380-420	•	•	•	•	•	•	•	•	•
	500-550-600-650	•	•	•	•	•	•	•	•	•
EWAD-AJYNN/H	200-210	•(1)	•(2)(3)	•(1)	•(2)(3)	•	•		•	•
	240-260-280-300-320-340-400	•	•	•	•	•	•		•	•
	420-460-480-500-550-600	•	•	•	•	•	•		•	•
EWAD-AJYNN/Q	210-240-260-280-300-320-340						•	•	•	•
	400-440-460-500						•	•	•	•

- (1) Unit length increase by 230mm
- (2) Unit length increase by 310mm
- (3) Not available with Option OPLN
- (4) High pressure side gauge

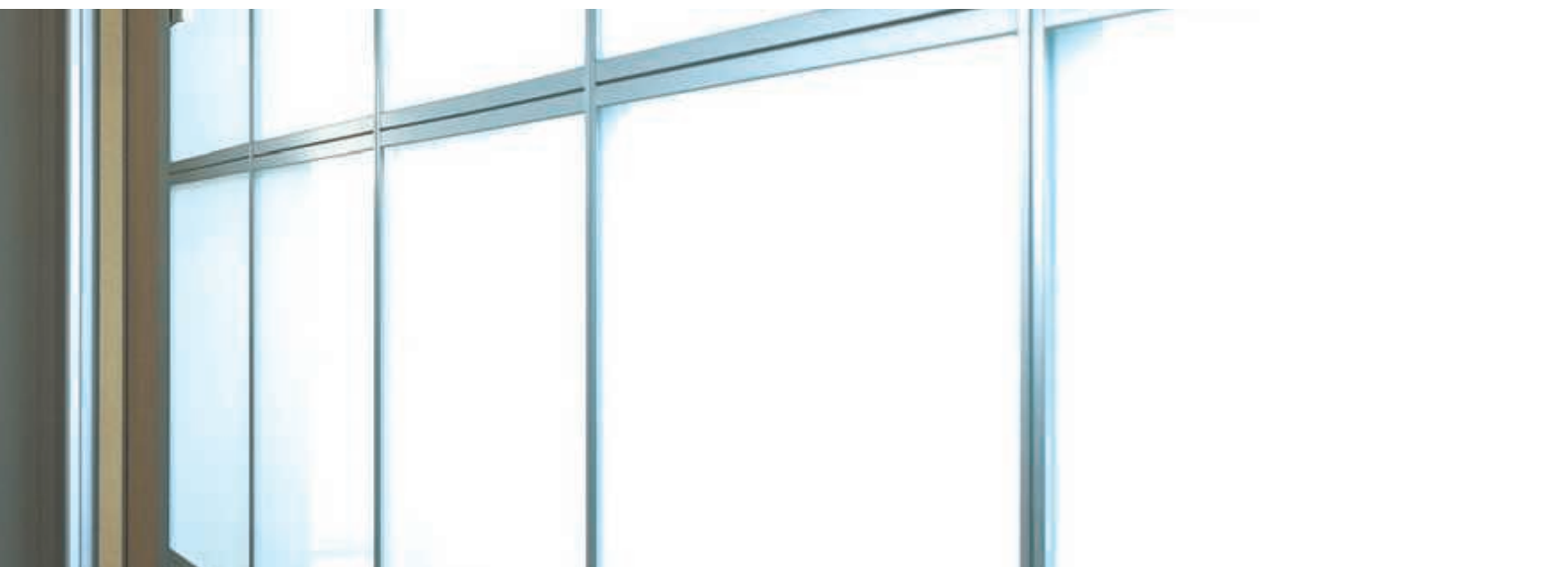
ACCESSORIES

Reference	Communication cards			Remote user interface
	EKAC200J	EKACBAC	EKACLON	EKRUPCJ
EWAD190-600AJYNN	•	•	•	•
EWAD260-650AJYNN/A	•	•	•	•
EWAD200-600AJYNN/H	•	•	•	•
EWAD210-500AJYNN/Q	•	•	•	•



LWE		Electrical				Refrigerant				Condenser				Misc
High Glycol	Low Glycol	Evaporator heater	Main switch	Soft starter	Power factor 0,9	Electronic Expansion Valve	Pressure relief valve	Suction stop valve	Gauges	Coil guards	Blank Cu/Al coils	Cu/ Sn coils	Cu/ Cu coils	Spring Anti Vibration Mounts
OPZH	OPZL	OP10	OP52	OPSS	OPPF	OPEX	OP03	OP12	OPGA	OPCG	OPAL	OPSN	OPCU	OPSVM
STD	STD	STD	STD		•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD		•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD	•	•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD	•	•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD		•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD	•	•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD		•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD	•	•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD		•	•	•	STD	•(4)	•	•	•	•	•
STD	STD	STD	STD	•	•	•	•	STD	•(4)	•	•	•	•	•

Buffer tanks				Sequencing Panel	Plant Visor	Modem		Converter RS485 to RS232
EKBT500N	EKBT10N	EKBT500C	EKBT10C	EKCSCII	EKPV2J	EKMODEM	EKGSMOD	EKCON
•	•	•	•	•	•	•	•	•
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ENVIRONMENTAL AWARENESS

Air Conditioning and the Environment

Air conditioning systems provide a significant level of indoor comfort, making possible optimum working and living conditions in the most extreme climates.

In recent years, motivated by a global awareness of the need to reduce the burdens on the environment, some manufacturers including Daikin have invested enormous efforts in limiting the negative effects associated with the production and the operation of air conditioners.

Hence, models with energy saving features and improved eco-production techniques have seen the light of day, making a significant contribution to limiting the impact on the environment.



In all of us,
a green heart



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues.

For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment.

This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



Daikin Europe N.V. is approved by LRQA for its Quality Management System in accordance with the ISO9001 standard. ISO9001 pertains to quality assurance regarding design, development, manufacturing as well as to services related to the product.



ISO14001 assures an effective environmental management system in order to help protect human health and the environment from the potential impact of our activities, products and services and to assist in maintaining and improving the quality of the environment.



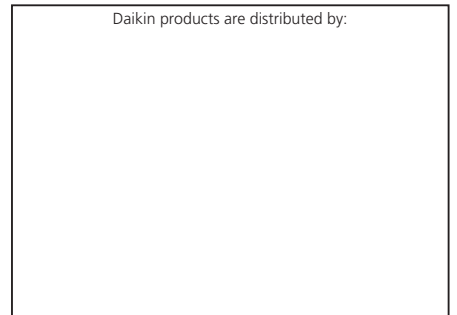
Daikin units comply with the European regulations that guarantee the safety of the product.



Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory. Certification is valid for air cooled models <600kW and water cooled models <1500kW.

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